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# Institutional Interaction in Global Environmental Governance: The Case of the Cartagena Protocol and the World Trade Organization

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## Introduction

This article explores the relationship between the World Trade Organization (WTO) and the Cartagena Protocol on Biosafety from the point of view of institutional interaction. In order to do this, we propose a conceptual framework for analyzing institutional interaction. Despite a growing interest of both scholars and policy-makers in the issue of institutional interaction, the conceptual development of its analysis is still at an early stage. Institutional interaction (or interplay) generally refers to the phenomenon that international institutions influence each other in ways that are relevant for their development and effectiveness. A number of studies have highlighted the challenges and, less frequently, the opportunities such interaction poses to international (environmental) governance.<sup>1</sup> Although a number of useful distinctions have been introduced,<sup>2</sup> no encompassing conceptual framework has emerged that could serve as a general basis for the empirical investigation of specific cases. In particular, few efforts have been made to enlighten the ways in which institutional interaction comes about.<sup>3</sup>

Given this assessment, it is hardly surprising that studies of the relationship between the WTO and the international biosafety regime have not yet been

\* This paper was prepared in the context of an initiative of the United Nations University. A somewhat modified version will appear in the forthcoming book volume *Institutional Interplay: The Case of Biosafety*, edited by W. Bradnee Chambers and Joy A. Kim (Tokyo: UN University). The conceptual framework presented has been developed in the framework of a European research project supported by the European Community (EVK-CT-2000-00079 INTERACTION). The results of this research project are presented in Oberthür and Gehring 2006b. We would like to thank three anonymous reviewers, Oran R. Young and Rhiannon Williams for providing comments on previous versions of this paper.

1. Young 2002; for a number of concrete case studies see Oberthür 2001 and 2003; Rosendal 2000 and 2001; Andersen 2002; and Jacquemont and Caparrós 2002.

2. Young 1996; Young et al. 1999; and Young 2002.

3. But see Stokke 2001a and b.

predicated on elaborate concepts of institutional interaction. The tense and potentially conflicting relationship between the international trade order represented by the WTO and various multilateral environmental agreements, such as the Cartagena Protocol, constitutes a prominent element of the broader agenda of institutional interaction.<sup>4</sup> Studies on the relationship between the Cartagena Protocol and the WTO have so far focused either on the importance of this relationship in the negotiations on the Cartagena Protocol or on the analysis of the scope for inconsistency and conflict between both sets of norms and rules.<sup>5</sup>

In this paper, we offer an encompassing conceptual framework for analyzing empirical cases of institutional interaction and their governance implications. We further illustrate the fruitfulness of this framework by applying it to the analysis of the relationship between the WTO and the Cartagena Protocol. The conceptual framework rests on two pillars. First, we suggest that the analysis of institutional interaction should start from clearly identified *cases* of interaction involving two institutions connected by one causal relationship. Second, we introduce a number of distinct causal mechanisms and subtypes of these mechanisms that are characterized by distinct causal pathways and different governance conditions. We submit that every case of institutional interaction follows one of these causal mechanisms.

Applying this conceptual framework to the interaction between the international biosafety regime and the WTO regarding the regulation of international trade in genetically modified organisms (GMOs) reveals a stepwise delimitation of the jurisdictions of both institutions. The overall interaction consists of two separate instances in which inter-institutional influence runs in opposite directions. Both cases of interaction follow a common causal mechanism driven by anticipated and actual commitments of parties under both institutions. On the basis of the diverging objectives of the WTO and the biosafety regime as pursued by different groups of countries and policy communities, the interest of states that are parties to both agreements in avoiding inconsistent commitments drives both cases towards a jurisdictional delimitation of both institutions. While each of the institutions involved has had a disruptive influence on the other by restricting its room for regulatory activity, the resulting jurisdictional delimitation in which the Cartagena Protocol proved a surprising strength has limited the potential for conflict between both regimes.

The interest of states that are parties to both agreements in avoiding inconsistent commitments is also likely to frame the future evolution of the relationship between the regimes. All else being equal, potential future political and judicial decision-making in both regimes is constrained by existing commitments that will tend to drive both regimes toward developing in compatible ways. While major political initiatives to change the current jurisdictional balance hold little promise, the relationship between both regimes is to be worked out

4. E.g. Brack, 2002; Schoenbaum 2002; and Shaw and Schwartz 2002.

5. See e.g. contributions in Bail, Falkner, and Marquard 2002; Adler 2000; Burgiel 2002; Eggers and Mackenzie 2000; Rivera-Torres 2003; and Safrin 2002b.

further in their implementation “on the ground” when states regulate trade in GMOs. Judicial decision-making on related challenges of national regulations under the WTO dispute-settlement procedures or the compliance mechanism of the Cartagena Protocol may result in a further delimitation of jurisdictions. Overall, there is a good chance that both regimes will develop in consistent ways in the future.

The analysis reveals the general structure of institutional interaction of the jurisdictional-delimitation type that is characterized by the competitive quest of two (or more) institutions for jurisdictional authority and occurs more frequently in global environmental governance. It enables us to identify the underlying driving forces and the consequences of the interaction. It emerges that the structure of international governance provides for powerful forces driving institutions with differing objectives—such as the biosafety regime and the WTO—towards a jurisdictional balance that contains and limits the potential for conflict. While the institution regulating the field prior to the other acquires a first-mover advantage, which side is more successful in determining the eventual jurisdictional balance is subject to the vagaries of the political process based on interests of varying strength—with all accompanying uncertainties and attractions. Thus, although the allegedly powerful WTO was first in structuring the regulatory field of international trade in GMOs, the seemingly weak Cartagena Protocol showed surprising strength in assuming regulatory authority and in exploiting the remaining room for maneuver.

## 2. Conceptualizing Institutional Interaction

### *2.1 Establishing a Single Cause-Effect Relationship between Two Institutions*

Interaction, or interplay, between international institutions—be it international regimes or international organizations—requires that one institution (the source institution) affects the development or performance of another institution (the target institution).<sup>6</sup> To establish an incident of institutional interaction, we must identify (1) the independent variable, namely the source institution and more specifically its particular component(s) or decision(s) from which influence originates; (2) the dependent variable, i.e. the target institution and more specifically its particular component(s) that are subject to influence originating from the source institution; and (3) a cause-effect relationship between the source institution and the target institution accounting for the identified effect. Demonstrating a cause-effect relationship requires identifying the precise causal mechanism that drives the incident of institutional interaction and leads to an observable or anticipated effect within the target institution or the issue-area governed by it. Causal mechanisms are addressed in more detail in section 2.2 below.

In order to allow for serious causal analysis, we suggest disaggregating

6. Breitmeier 2000; and Gehring and Oberthür 2004.

complex real-world interaction situations into an appropriate number of *cases of interaction* with a single source institution, a single target institution, and a unidirectional causal mechanism connecting the two. Disaggregation will be especially required in three types of situations. First, two institutions may be involved in numerous cases of interaction at the same time. For example, the Montreal Protocol for the protection of the ozone layer indirectly promotes the use of certain greenhouse gases (hydrofluorocarbons, HFCs) regulated under the Kyoto Protocol to the UN Framework Convention on Climate Change. Concurrently, it mandates the phase-out of chlorofluorocarbons (CFCs) that are potent greenhouse gases, thus supporting the objective of the international climate change regime. Moreover, the Montreal Protocol's non-compliance procedure provided a precedent for the elaboration of a similar component within the climate change regime.<sup>7</sup>

Second, an interaction situation may involve more than two institutions. For example, the Baltic Sea is affected by several global environmental regimes addressing, *inter alia*, oil pollution from ships and dumping of wastes at sea, an important regional regime (Helsinki Convention for the protection of the Baltic Sea), and overall arrangements such as the United Nations Convention on the Law of the Sea (UNCLOS).<sup>8</sup> The institutions co-governing this area may interact with each other in various ways—either by affecting each others' performance or by influencing each others' decision-making processes.

Third, two or more institutions may "co-evolve" over time with influence running back and forth between the institutions so that neither of the institutions would exist in its current state in the absence of the other. In this case, distinguishing a suitable number of pairs of institutions connected by unidirectional causal pathways requires that we disaggregate the process analytically into sequential cases over time.<sup>9</sup> For example, the co-evolution of the global Basel Convention on the transboundary movement of hazardous wastes and several related regional regimes can be disaggregated into two phases. In the first analytical phase, the unsatisfactorily weak global Basel Convention caused various developing countries to adopt separate regional regimes prohibiting the import of hazardous wastes. In the second phase, the existence of these regional regimes strengthened those advocating a ban on waste exports from OECD countries to non-OECD developing countries that was eventually agreed under the global regime.<sup>10</sup>

The effects or consequences of a case of institutional interaction may be beneficial, adverse, or neutral for the target institution. The main effects of institutional interaction occur in the target institution and can be assessed against this institution's prime objective. This approach builds on the established research on the effectiveness of international institutions. That work has also used

7. Oberthür 2001.

8. Young 1996.

9. Archer 1985; and Carlsnaes 1992.

10. Meinke 2002; and Clapp 1994.

an institution's prime objective as the major yardstick for assessing its consequences.<sup>11</sup> In contrast to this line of research, the causes and effects of institutional interaction are located in the domains of different institutions so that the prime objective of the target institution is used as the relevant yardstick. If the effects of a case of institutional interaction support the objectives of the target institution, they therefore create *synergy* between the two institutions involved. If they contradict the target's objective, they result in *disruption* and *conflict*. The aforementioned influence of the Montreal Protocol on the climate change regime provides suitable examples for synergistic (CFCs) and disruptive (HFCs) effects. The effects of an interaction may also be *indeterminate* or *neutral*, if they do not clearly hamper or reinforce the target institution's pursuit of its objective.<sup>12</sup>

Our research strategy is based on the assumption that complex interaction situations can be properly understood by disaggregating them into a suitable number of clear-cut cases. While this approach allows for a clear causal analysis, it does not preclude that we recombine cases to form a more complex picture. Co-evolution processes such as the one between the Basel Convention and several regional regimes can be analyzed and understood as a causal chain in which one case of interaction triggers the next. In other cases, clusters of parallel cases of interaction such as those related to the Baltic Sea may be recombined. Recombining cases of interaction to more complex interaction situations in principle also allows us to grasp the "emergent properties" of the larger situation, i.e. any logic or rationale that emerges only from the complexity of the situation or from the combination of cases (as opposed to the sum of the individual cases).<sup>13</sup>

## 2.2 Causal Mechanisms of Institutional Interaction

To establish the cause-effect relationship between the source and the target institutions, we must identify the precise causal mechanism that drives an incident of institutional interaction.<sup>14</sup> A causal mechanism is a set of statements that are logically connected and provide a plausible account of how a given cause creates an observed effect.<sup>15</sup> Since international institutions do not act on their own, actors such as states and other stakeholders that negotiate, develop and implement the relevant agreements are essential elements of a causal mechanism that drives institutional interaction.<sup>16</sup> To identify a causal mechanism driving institutional interaction, we must demonstrate (1) how the identified component of the source institution affects the preferences or behavior of relevant

11. E.g. Miles et al. 2002; Young 1999; and Haas, Keohane, and Levy 1993.

12. Gehring and Oberthür 2006, 310–311.

13. Gehring and Oberthür 2006, 358–367.

14. Elster 1989, 3–10; and Hedström and Swedberg 1998.

15. Schelling 1998.

16. See also Selin and VanDeveer 2003.

actors, (2) that this leads to a change of the preferences or individual behavior of actors relevant to the target institution, and (3) that these changes of preferences or behavior produce the effect observed within the target institution or its issue-area (Figure 1). In the following, we introduce four general causal mechanisms that may drive interaction between two international institutions. In two of these causal mechanisms that are derived from different theories of institutions, negotiation theory and cooperation theory, the source institution directly influences the rule-making process of the target (section 2.2.1). The other two causal mechanisms are characterized by the fact that the source institution influences the implementation and effectiveness of the target institution (rather than its decision-making process) (section 2.2.2).<sup>17</sup>

### *2.2.1 Interaction Influencing the Decision-Making Process of the Target Institution*

In order to influence the rule-making of another institution, the source institution has to influence the preferences of decision-makers operating within the target institution. This may happen in two ways. First, the source institution may produce important new information, knowledge or ideas (cognitive interaction). Second, the commitments introduced by one institution may affect the preferences of actors negotiating within another institution (interaction through commitment). In addition, different sub-types of these causal mechanisms can be distinguished. They vary with respect to key characteristics that matter from a governance perspective.<sup>18</sup>

*Cognitive interaction* is purely based on persuasion and may be conceived of as a particular form of inter-institutional learning.<sup>19</sup> It occurs if information, knowledge or ideas<sup>20</sup> produced within one institution modify the perception of relevant decision-makers in another institution. It is based on the assumption that in real-world situations the rationality of actors is usually “bounded,” either because the actors do not have all relevant information or because their information processing capacity is limited.<sup>21</sup> Actors will therefore be prepared to adapt their perceptions to new information. These perceptions then shape their interests.<sup>22</sup> For this to happen, the collective decision-making process of the source institution must produce some new information that, upon its transfer to the target institution, changes the order of preferences of relevant actors and thus influences the collective negotiation process of the target institution and its output. The source institution does not exert any pressure. However, once relevant actors adapt their preferences, the consequences will be felt even by those participants of the process which have not been convinced.

17. The causal mechanisms are discussed in more detail in Oberthür and Gehring 2006a, 31–42.

18. A more detailed discussion of the subtypes of the causal mechanisms and their characteristics can be found in Gehring and Oberthür 2006, 325–356.

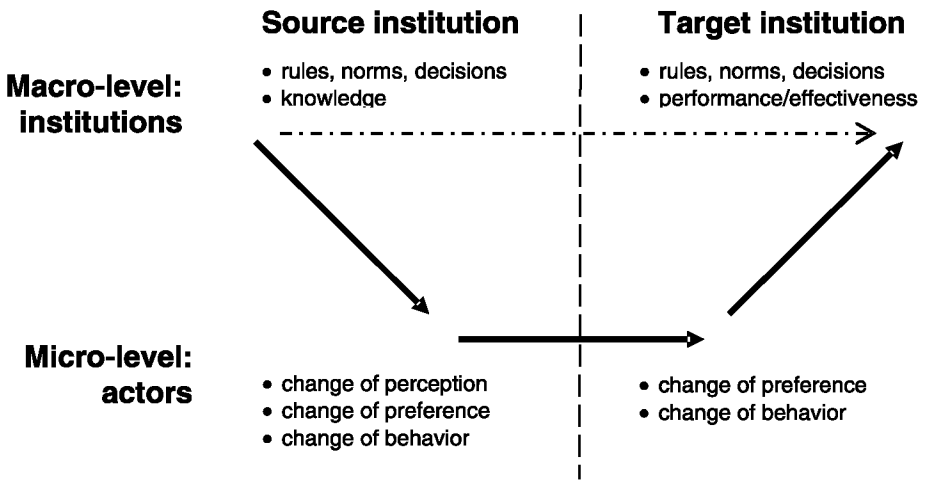
19. See also Stokke 2001b, 10.

20. Risse-Kappen 1994; and Yee 1996.

21. Simon 1972.

22. Checkel 1998; and Risse 2000.

**Figure 1**  
Causal Mechanism of Institutional Interaction



Source: Adapted from Coleman 1990: 1–23; and Hedström and Swedberg 1998: 21–23.

We can distinguish two different ideal types of cognitive interaction depending on whether the interaction is initiated by the source or the target. First, the target institution may initiate the interaction by drawing on aspects of other institutions as a *policy model* to devise a solution to a problem it faces. For example, negotiators of the Kyoto Protocol on climate change used the compliance system under the Montreal Protocol for the protection of the ozone layer as a policy model when elaborating a similar system.<sup>23</sup> Second, the source institution may trigger the interaction by issuing a *request for assistance* to the target without having a particular means available to support its wish. For example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) requested assistance from the World Customs Organization (WCO) and Interpol to help enforce its trade restrictions.<sup>24</sup>

*Interaction through commitment* is based on the fact that a commitment entered into within an international institution may change actors' preferences within another institution. It is closely related to the categories of "normative" and "utilitarian" interplay introduced by Stokke.<sup>25</sup> At a minimum, actors may be expected to develop an interest in passing compatible decisions in international forums to which they are parties in order to be able to comply with their commitments. Otherwise, they could neither preserve a reputation of keeping their

23. Oberthür and Ott 1999, 215–222; and Werksman 2005.

24. Lanchbery 2006.

25. Stokke 2001b.



promises providing the basis of future cooperation<sup>26</sup> nor preserve the benefits of cooperation that depend on stabilizing the prospects for compliance.<sup>27</sup> Members of an institution may also easily accept a commitment which they have already subscribed to in another institution because it does not involve additional costs. They may become interested in the transfer of a commitment to other institutions if this promises additional benefits such as the extension of the commitment to potential competitors. Being aware of the binding force of obligations, they may even gain an interest in adopting commitments in one institution in order to frame the policy choices available in another institution. As a result, actors may appear to either pursue “legal consistency” or “strategic inconsistency.”<sup>28</sup>

Interaction through commitment involves, first, that members of the source institution agree upon an obligation that might be relevant for the target institution. Second, this obligation must actually commit one or more members of the source institution. Third, it must induce at least one member of the target institution to change its preferences. Fourth, this must influence the collective decision-making process of the target institution and its output. In the ideal case of interaction through commitment, an obligation originating from the source institution will affect a subsequent decision-making process of the target institution on a related subject. However, anticipated commitments to be entered into within the source institution may also trigger the mechanism.

Interaction through commitment requires a certain overlap of both the memberships and the issue-areas of the interacting institutions and, in contrast to cognitive interaction, it does not completely depend on the target institution. Without a jurisdictional overlap of issue-areas, commitments entered into in one institution could not become relevant to another. Without overlapping memberships, the target institution would remain unaffected because none of its members would be subject to relevant commitments. While in the case of cognitive interaction the relevant actors modify their preferences entirely voluntarily, interaction through commitment incites them to do so because of the costs and benefits involved.

We can distinguish three ideal types of interaction through commitment. First, *interaction between nested institutions* may help extend an obligation from a smaller institution to an institution with a larger membership and similar objectives. Because all members of the smaller institution will tend to favor the extension of the obligation, the relevant coalition in the bigger institution will be strengthened. For example, the ban on dumping and incineration of waste at sea within the regional regime for the protection of the North-East Atlantic (Oslo and Paris Conventions, OSPAR) led to the adoption of similar measures within the global London Dumping Convention.<sup>29</sup> Second, a target institution

26. Keohane 1984, 105–106; and Young 1992, 175–176.

27. Martin 1993.

28. Raustiala and Victor 2004, 300–302.

29. Skjærseth 2006; and Meinke 2002.

may take over obligations from a source because the memberships of both institutions are largely identical so that members of the target can hardly object to such a transfer. Such interaction will only be relevant if the target institution has *additional means* available to foster compliance with and enforcement of the obligation. For example, once political agreement had been reached within the soft-law based International North Sea Conferences in the 1980s and 1990s, parties to OSPAR easily agreed on hard-law targets for reducing pollution.<sup>30</sup> Both policy diffusion between nested institutions and interaction resulting in the activation of additional means will usually enhance global governance.

In contrast, institutions with differing objectives will tend to regulate overlapping issues in diverging ways. Because such cases entail the danger that states that are members of both institutions become subject to incompatible commitments, they create a demand for *jurisdictional delimitation*. They may be resolved amicably, but can easily lead to political conflict, if different actors involved in the decision-making process prefer different allocation of jurisdictional authority. The tense relationship between the WTO and the Cartagena Protocol (and other multilateral environmental agreements) provides a case in point. Section 3 will therefore shed more light on this type of institutional interaction through commitment.

### 2.2.2 Interaction Directly Affecting the Implementation and Effectiveness of the Target Institution

In addition to the decision-making of the target institution, the source institution may directly affect the target's implementation and effectiveness. To derive suitable causal mechanisms we build on the distinction between the output (rules and norms), the outcome (i.e. the effects on the behavior of relevant actors in the issue-area) and the impact of an institution (i.e. its effect on the environment or other ultimate target of governance) established in research on the effectiveness of international institutions.<sup>31</sup> Accordingly, a distinction can be made between behavioral interaction at the outcome level and impact-level interaction.

*Behavioral interaction* exists if an international institution induces behavioral changes within the issue-area governed by another and thereby influences its performance. All international governance institutions are designed to influence the behavior of relevant actors in order to achieve their objectives such as protecting the environment or liberalizing international trade.<sup>32</sup> Such behavioral effects may also directly or indirectly affect the implementation of another institution. For example, increased use of HFCs resulting from the Montreal Protocol for the protection of the ozone layer is immediately relevant for the

30. Skjærseth 2006.

31. Underdal 2004.

32. Levy, Young, and Zürn 1995; and Young 1992.

implementation of the climate change regime that aims at reducing the emissions of greenhouse gases, including HFCs.<sup>33</sup>

*Impact-level interaction* occurs if an institution's impact on its ultimate target of protection, such as free trade or protection of the ozone layer, affects the ultimate target of the other institution. In contrast to the other causal mechanisms, impact-level interaction does not involve social interaction between the two interacting institutions, but is based on a scientific link between the two targets of governance involved.

A stylized example that we owe to Arild Underdal may illustrate this least intuitive causal mechanism. Consider that protection of the stocks of cod and herring are the ultimate targets of two separate international institutions. As cod eat herring, successful protection of cod, resulting in a growing population of this species, will unintentionally decrease the population of herring. In this case, the two institutions involved are not linked at the level of output (neither the norms of nor the knowledge produced within the cod regime influence the norms protecting herring), nor through behavioral changes (decreased fishing of cod does not directly influence the fishing activities related to herring). They are "functionally linked"<sup>34</sup> at the impact level because the effects of the source institution on its ultimate regulatory target (population of cod) affect the ultimate regulatory target of the target institution (population of herring).

Both behavioral interaction and impact-level interaction are characterized by a high ability of the source institution to influence the target unilaterally. In contrast to interaction at the output level, they do not depend on a decision within the target institution. A collective decision by the target institution, or the source institution (or a "political linkage" between them<sup>35</sup>), in response to the effects of behavioral or impact-level interaction is possible but such interaction "management"<sup>36</sup> is not an essential element of these causal mechanisms and the effect will also occur without a policy response.

### 2.3 Implications for the Empirical Analysis

The aforementioned conceptual foundation results in a twofold guidance for analyzing the interaction between the WTO and the Cartagena Protocol. First, the inter-relationship between the WTO and the Cartagena Protocol should be disaggregated into clearly identifiable cases of interaction. Instead of determining whether both instruments are compatible or have a potential for conflict, our approach leads us to ask how exactly each side has influenced the other, in what ways and with which consequences. It also allows us, by means of recombination of related cases, to obtain an analytically clear overall picture of the interaction situation and its effects.

33. Oberthür 2001.

34. Young et al. 1999; and Young 2002.

35. Young et al. 1999, 50.

36. Stokke 2001a.

Second, particular attention has to be paid to identifying the causal mechanisms and ideal types of institutional interaction that each case of interaction between the WTO and the Cartagena Protocol follows. Each of the ideal types and causal mechanisms is characterized by different rationales, driving forces and governance conditions, resulting in varying effects/consequences. For example, persuasion is the only means available to the source institution in cases of cognitive interaction, while the source can and does influence the costs and benefits accruing to certain policy options of the target institution in cases of interaction through commitment. Within the realm of interaction through commitment, there is a gulf of differences distinguishing interaction between nested institutions that tends to enhance global governance by means of horizontal policy diffusion from issues of jurisdictional delimitation that tend to lead to disruption and conflict.

Overall, our conceptual approach enables us to engage in an exact and differentiated diagnosis of institutional interaction, which is a necessary precondition for devising any adequate policy response. Different causal mechanisms and ideal types require different responses and provide different political opportunities. Hence, our conceptual approach to analyzing institutional interaction promises to deliver results that are relevant not only for scholars but also for policy-makers.

### 3. Interactions between the WTO and the Biosafety Regime

Applying our conceptual framework to the interaction between the biosafety regime and the WTO reveals that both sides have influenced each other in the past. Disaggregating the interaction situation, we first analyze the influence of the biosafety regime on the WTO before turning to the ways in which the WTO has affected the Cartagena Protocol. Overall, these disruptive cases of interaction have resulted in a stepwise delimitation of jurisdictions between both institutions.

#### *3.1 The Biosafety Regime's Influence on the WTO: Assuming Regulatory Authority*

Throughout the 1980s, both economic/trade interests and environmental interests had made first attempts to span and occupy the newly emerging regulatory field of international trade in genetically modified organisms (GMOs). The Organization for Economic Development and Cooperation (OECD), the UN Industrial Development Organization (UNIDO), the World Health Organization (WHO), the UN Food and Agriculture Organization (FAO), as well as the UN Environment Programme (UNEP) became involved in the field.<sup>37</sup>

Two aspects of the issue of international trade in GMOs were in potential conflict and essentially precluded joint regulation of the subject matter. First,

37. Pythoud and Thomas 2002, 40; and Zedan 2002, 28–33.

biotechnology created demand for the establishment of an international market so that GMOs could be traded like other goods. This demand was in line with the objectives of the world trade regime—then primarily built upon the General Agreement on Tariffs and Trade (GATT)—and was reflected in the trade interests of GMO exporters. At the same time, the spread of GMOs entailed new risks for the environment and for existing socio-economic structures. These risks created demand for regulation to protect “biosafety,” i.e. the protection of biological diversity and established socio-economic structures against the risks associated with the spread of GMOs. Protective regulation would restrict markets so that the two demands for market creation and market restriction were pointing in opposite directions.<sup>38</sup>

Trade interests were first in occupying the newly emerging ground of regulating trade in GMOs by means of the WTO agreements of 1994. The GATT does not limit the general ability of countries to restrict trade in GMOs.<sup>39</sup> Consequently, members of the world trade regime prior to the establishment of the WTO agreements were free to restrict market access of genetically modified products, as long as this restriction applied to GMOs of both foreign and domestic origin (principle of national treatment). The new Agreement on the Application of Sanitary and Phytosanitary Measures of 1994 (SPS Agreement) changed this situation and made import restrictions subject to a number of requirements. In particular, it requires that measures restricting the import of GMOs (and other products) for sanitary or phytosanitary reasons be based on sufficient scientific evidence and a risk assessment that conforms to certain standards defined by the Agreement and further developed through interpretation by the WTO dispute settlement organs.<sup>40</sup> Socio-economic considerations, although not explicitly excluded, are not recognized in this risk assessment.<sup>41</sup> Furthermore, Article 5.7 of the SPS Agreement subjects precautionary measures to a number of conditions. In particular, it requires that scientific evidence be insufficient; that measures be adopted “on the basis of available pertinent information”; that the party concerned seeks to obtain the information necessary for a full risk assessment; and that it reviews the measure “within a reasonable period of time.” The WTO Agreement on Technical Barriers to Trade (TBT Agreement) that was strengthened in 1994 may be of lesser relevance for trade in GMOs. It establishes certain criteria that technical regulations such as labeling requirements have to fulfill and might apply to restrictions on GMO imports for other than sanitary or phytosanitary purposes.<sup>42</sup>

Against this backdrop, the biosafety regime first began to influence the WTO in 1995 when it increasingly claimed authority for regulating trade in

38. On the issue in general see e.g. Falkner 2000, 300–303.

39. Rivera-Torres 2003, 289–291; and Boisson de Chazournes and Mbengue 2004, 291–294.

40. E.g. Rivera-Torres 2003, 296–298.

41. Gupta 2001.

42. For relevant analyses of the WTO agreements see Rivera-Torres 2003; Eggers and Mackenzie 2000; Howse and Meltzer 2002; and Safrin 2002b.

GMOs. In 1995, parties to the Convention on Biodiversity (CBD) launched negotiations on a biosafety protocol.<sup>43</sup> To be sure, the undertaking of establishing a biosafety protocol was broader than assuming authority for trade in GMOs—or, as they are called in the context of the biosafety regime, “living modified organisms” (LMOs)—from the WTO. Most importantly, the protocol aims at providing guidance and assistance to developing countries which lack sufficient capacities for enacting and implementing suitable domestic rules. Defining more clearly the *rights* of countries to restrict GMO imports—as opposed to the restrictions of these rights under the WTO—formed, however, a central part of the endeavor.<sup>44</sup> In this respect, the Cartagena Protocol was to elaborate more specific rules for one sub-area of international trade regulated by the WTO, namely trade in GMOs.

How far-reaching this claim for regulatory authority over trade in GMOs was only became clear during the course of negotiations and in particular from 1998. Parties had varying positions on the extent to which trade in GMOs would be subject to the emerging Protocol rules and many participants initially did not fully grasp the agreement’s implications for GMO trade. The resolve of the EU environment ministers, for example, was significantly strengthened by the negative outcome of the WTO dispute over beef hormones in 1998. Overall, awareness of the trade implications of the emerging Protocol grew gradually and matured from 1998.<sup>45</sup>

The negotiations on a biosafety protocol under the CBD influenced the international interest constellation regarding the regulation of trade in GMOs. Because parties to the CBD had effectively committed themselves to introducing specific rules on restricting trade in GMOs, WTO members (and others) interested in preventing the WTO from further regulating trade in GMOs were significantly strengthened. For those members of both regimes in favor of free trade in GMOs, negotiating and introducing relevant rules in the WTO would have meant not to honor the commitment made under the CBD. For those countries advocating regulation under the CBD, it would have meant weakening the jurisdictional authority of the biosafety regime. For both sides, it would have entailed the danger of elaborating inconsistent provisions.

As a result of this influence on actors’ preferences, the biosafety regime helped block attempts to further regulate biotechnology under the WTO in 1999. Proposals for regulating biotechnology under the WTO were made by Canada, Japan and the US in the run-up to the WTO ministerial conference in Seattle in 1999. Trade interests saw a window of opportunity for reclaiming regulatory authority, given the failure to reach agreement under the CBD earlier that year. The proposals were successfully rejected in particular by developing countries with explicit reference to the ongoing negotiations under the CBD.

43. Falkner 2002, 6.

44. Falkner 2000, 302–303.

45. We are grateful to one of the anonymous reviewers for raising this point.

They considered the negotiations under the CBD as the preferable forum and feared that the WTO would seize exclusive jurisdiction over the issue.<sup>46</sup>

This influence of the biosafety regime on the WTO followed the causal mechanism of interaction through commitment and displayed the characteristics of the ideal type of jurisdictional delimitation with disruptive effects on the target institution. The case may not be easily recognized because it resulted in a non-regulation. On the basis of diverging objectives of both institutions, the CBD successfully and increasingly claimed and assumed regulatory authority from the WTO for the issue of trade in “living” GMOs from 1995. This had a noticeable effect on the interests of the members of the biosafety regime, which were for the most part also parties to the WTO. As a result, the WTO—that covers a much broader area than GMOs—lost its ability to elaborate detailed rules for the sub-area of trade in GMOs that was carved out from its jurisdiction and shifted to the biosafety regime. This disruptive effect on the WTO is evident from the failure to establish talks on biotechnology under the WTO in 1999. Overall, the case demonstrates a rather surprising strength of the seemingly weak biosafety regime vis-à-vis the supposedly much stronger WTO.

### *3.2 Influence of the WTO on the Design of the Cartagena Protocol*

Although the emerging biosafety regime had assumed regulatory authority from the WTO, negotiators of the Cartagena Protocol exercised this authority “in the shadow of the WTO.” While it was the parties to the biosafety regime (and not the parties to the WTO) that decided on the restrictions on trade in GMOs, most industrialized countries and many important developing countries were also members of the WTO. Other developing countries such as China were expecting to join the WTO soon. These countries were influenced and limited in their choices by existing WTO rules. They had to take into account the possible implications of the emerging Cartagena Protocol for the interpretation of WTO law. They also had a strong incentive to avoid incompatibilities between both instruments, because inconsistent rules could lead to costly conflicts in the implementation of both agreements. “Interaction through commitment” of the ideal type of jurisdictional delimitation disrupted the effectiveness of the Cartagena Protocol in two respects. First, the “shadow” of the WTO left its imprint in particular on the rules on risk assessment and precaution (and socio-economic considerations). These rules are at the centre of the Cartagena Protocol because they specify the criteria that guide the transboundary movement of LMOs.<sup>47</sup> Second, the influence of the WTO led to the elaboration of provisions clarifying the relationship of the Protocol with “other international agreements.”

**Risk assessment, precaution and socioeconomic considerations:** Existing WTO rules affected the preferences of countries negotiating the Cartagena

46. Palmer, Chaytor, and Werksman 2006; and Falkner 2000, 305.

47. Graff 2002; and Palmer, Chaytor, and Werksman 2006.

Protocol in particular with respect to the provisions on risk assessment, precaution and socioeconomic considerations. These provisions had a high potential for inconsistencies with WTO law, which could have led to unwelcome conflicts in the implementation of both agreements. Counterfactual reasoning reveals that considerations of consistency probably were least important for the position of the Miami Group that most forcefully used the argument of WTO compatibility. These countries would have strongly opposed restrictions on the free trade in GMOs/LMOs even in the absence of relevant WTO rules. However, the hands of the Miami Group were strengthened in the Cartagena negotiations because most other countries including the proponents of strong biosafety provisions such as the EU and the Like-Minded Group of developing countries had an interest in avoiding incompatible regulations. Even though these countries forcefully defended the regulatory objectives of the biosafety regime, their stance was significantly softened due to their wish to avoid incompatible commitments that could diminish the effectiveness of one or even both agreements. US non-membership in the CBD further strengthened this interest because it increased the danger of challenges under the WTO dispute settlement procedures.<sup>48</sup>

As a result, the risk assessment provisions of the Cartagena Protocol largely match and elaborate those of the WTO SPS Agreement. The Protocol obliges exporters of certain LMOs (such as LMOs for use as seeds) to seek and receive the so-called Advance Informed Agreement of the importing country before exporting (itself a significant restriction of free trade). Articles 10 and 15 of the Protocol require importing countries to base their related decisions on a risk assessment and to follow certain procedural steps. LMOs for direct use as food or feed, or for processing are generally exempted from the Advance Informed Agreement procedure and account for about 90% of trade in GMOs.<sup>49</sup> Article 15 lays down some criteria for conducting risk assessments that are further specified in Annex III of the Protocol. These criteria are more elaborate than those of the SPS Agreement but do not diverge from them in any obvious way. In particular, both regimes clearly require the risk assessment to be science-based.<sup>50</sup>

The Protocol provisions on precaution and socioeconomic considerations are more problematic, but can also be interpreted in ways that are consistent with WTO rules. According to Articles 10.6 and 11.8 of the Protocol, "lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effect of a living modified organism on the conservation and sustainable use of biological diversity in the Party of import, taking also into account risks to human health, shall not prevent that Party from taking a decision, as appropriate, with regard to the import [ . . . ], in order to avoid or minimize such potential adverse effects." In contrast

48. Palmer, Chaytor, and Werksman 2006; on the negotiating process see Falkner 2000 and 2002.

49. Eggers and Mackenzie 2000, 525 and 530.

50. E.g. Rivera-Torres 2003, 296–298, 313–314; Eggers and Mackenzie 2000, 539; and Stoll 2000, 113–114.



to Article 5.7 of the SPS Agreement, this language does not require precautionary action under the Cartagena Protocol to be based upon “available pertinent information” or it to be adopted “provisionally.” It also does not require parties to seek to obtain additional information and to review the precautionary measure “within a reasonable period of time.”<sup>51</sup> Furthermore, Article 26.1 of the Protocol goes beyond the SPS Agreement by allowing countries to “take into account, consistent with their international obligations, socioeconomic considerations arising from the impact of living modified organisms on the conservation and sustainable use of biological diversity.” These provisions of the Cartagena Protocol on precaution and socioeconomic considerations differ from the existing WTO rules, but are *a priori* not inconsistent with them. Both sets of rules *can* be interpreted in consistent ways.<sup>52</sup> At the same time, the Cartagena provisions may be employed in the interpretation of the related WTO rules, which may result in more leeway being granted to biosafety interests. It is unclear how and to what extent exactly this might be done by the WTO dispute-settlement bodies.<sup>53</sup>

Overall, the provisions of the Cartagena Protocol relating to risk assessment, precaution and socioeconomic considerations significantly limit the potential for conflict between the Cartagena Protocol and the SPS Agreement. In particular, no obvious incompatibilities exist so that countries do not face the choice between the Scylla of not complying with the SPS Agreement and the Charybdis of not fulfilling their obligations under the Cartagena Protocol. Both instruments *can* be interpreted in mutually supportive ways. At the same time, there is no certainty that both agreements will be interpreted in compatible ways. Since the area of compatible interpretations has loose boundaries, different actors may arrive at different interpretations and may wish to exploit the room for maneuver that exists in this respect.<sup>54</sup> Therefore, a limited potential for interpreting in varying ways what may be considered “compatible” or “mutually supportive” remains.<sup>55</sup>

**Relation with other international agreements:** The significance of clarifying the relationship between the WTO and the Cartagena Protocol is rooted in the remaining room for different interpretations of both instruments by individual parties implementing them, by the conferences of parties and by the relevant judicial processes overseeing their implementation. In particular, the pow-

51. Stoll 2000, 114–117.

52. E.g. Gupta 2001, 277–279; Boisson de Chazournes and Mbengue 2004, 295–297; Eggers and Mackenzie 2000, 539–540; Howse and Meltzer 2002, 488–491; and Rivera-Torres 2003, 308, 314–315.

53. Boisson de Chazournes and Mbengue 2004, 297–301; Eggers and Mackenzie 2000, 541–542; and Howse and Meltzer 2002, 488–491.

54. See Raustiala and Victor 2004 for a similar argument regarding the “regime complex for plant genetic resources.”

55. Similar e.g. Rivera-Torres 2003; Safrin 2002b; Gupta 2001; Eggers and Mackenzie 2000; Howse and Meltzer 2002; Cottier 2002; and Stoll 2000.

erful dispute-settlement bodies of the WTO are mandated to take into account general rules of international law, and have developed a record of doing so (including paying attention to the provisions of multilateral environmental agreements).<sup>56</sup>

On this basis, one of the main contentious issues in the biosafety negotiations concerned the relationship between the future Cartagena Protocol and the WTO. Negotiators of the Cartagena Protocol were aware that both agreements could not be considered in isolation. They knew and anticipated that the Cartagena Protocol had the potential of influencing their obligations under the WTO. It may therefore not be surprising that it was the main trading blocks, namely the US and the EU, that became particularly involved in the debate. Their WTO obligations not only influenced but were even constitutive of their interests. The so-called Miami Group of LMO exporters (US, Canada, Australia, Argentina, Chile, Uruguay) in particular feared that, without a clarification, the customary *lex-posterior* rule might have suggested that the later Cartagena Protocol takes precedence over earlier WTO rules.<sup>57</sup> They therefore suggested a “savings clause” that would have effectively subordinated the Protocol to other international agreements, including the WTO. The EU in particular was opposed to such a subordination and favored a balance that would tend more towards the Cartagena Protocol (while paying due respect to their obligations under the WTO). It would have been content with not addressing the relationship with other international organizations at all.<sup>58</sup>

The resolution of the issue consists in a compromise somewhere in between both positions. The balance between the Cartagena Protocol and the WTO was defined in a way that does not subordinate either side to the other and treats them as equals. The Protocol parties express their willingness to interpret the Protocol and the WTO agreements in mutually supportive and compatible ways and, in effect, present this as a “peace offer” to be reciprocated by the WTO. To this end, three elements were incorporated in the preamble of the Protocol. First, parties to the Protocol recognize “that trade and environment should be mutually supportive with a view to achieving sustainable development.” This language implies the suggestion or request to the WTO to respond to the Cartagena Protocol by interpreting its own provisions in ways that would be compatible with the Protocol obligations. Second, the Protocol parties emphasize that the Protocol “shall not be interpreted as implying a change in rights and obligations of a Party under any existing international agreements.” They thus offer to limit the own regulatory and judicial authority by promising that the Protocol organs would not interpret the Protocol in ways that would be incompatible with WTO obligations. Third, parties express their understanding

56. E.g. Boisson de Chazournes and Mbengue 2004, 297–301; and Howse and Meltzer 2002.

57. Safrin 2002a, 439.

58. Safrin 2002a; and Alfonso 2002.

"that the above recital is not intended to subordinate this Protocol to other international agreements." This provision reinforces the Protocol parties' claim for authority to take relevant decisions and rejects a notion that the Protocol would be subordinate to the WTO. Overall, the preamble tries to prevent conflicts between both regimes by keeping a fine balance between limiting and upholding the Protocol's regulatory authority, while offering guidelines for a peaceful co-existence with the WTO.<sup>59</sup>

### *3.3 Overall Assessment: Stepwise Jurisdictional Delimitation*

The interaction between the biosafety regime and the WTO is composed of at least two cases in which influence runs in opposite directions. The biosafety regime exerted noticeable influence on the WTO when it claimed authority to regulate international trade in GMOs/LMOs from the mid-1990s because this move essentially excluded further regulation of this area by the WTO. The pre-existing regulations of the WTO SPS Agreement, in turn, heavily influenced several elements of the Cartagena Protocol, including its preamble and the provisions on risk assessment and precaution. Identifying these cases and their causal pathways requires disaggregating the interaction relationship between both institutions.

The competitive quest of the WTO and the biosafety regime for regulatory authority over the newly emerging issue of international trade in GMOs has resulted in a stepwise delimitation of jurisdictions. On the one side, the biosafety regime's negotiations on a biosafety protocol established its regulatory authority over trade in LMOs and thereby removed it, to a large extent, from the WTO. On the other side, the WTO agreements of 1994 severely limited the options available to biosafety negotiators for regulating trade in GMOs thereby casting their "shadow" on the emerging biosafety regime. While each case of interaction thus had a disruptive effect on the respective target and involved serious political conflicts between the respective policy communities, from a broader governance perspective the regulatory competition of the two regimes has led to a far-reaching jurisdictional delimitation. With severely limited room for incompatible interpretations and implementation, the potential for conflict has been greatly reduced (even though the result may not be to the liking of one or the other side). Both institutions were thus driven towards a jurisdictional delimitation even without a related overarching institutional structure governing this process.

These cases of inter-institutional influence followed the causal mechanism of interaction through commitment and, more specifically, the ideal type of jurisdictional delimitation. The interaction was premised on a significant overlap in membership of the WTO and the biodiversity regime. As a result, several countries that are members of both regimes were committed under one institu-

59. For analyses see Safrin 2002a; Cottier 2002; and Howse and Meltzer 2002.

tion when negotiating within the other. Incompatible commitments were looming because both the Cartagena Protocol and the WTO aim at regulating international trade in GMOs/LMOs and thus overlap in their jurisdictional scope. In doing so, they pursue different logics and the competing objectives of free international trade (WTO) and of biosafety (Cartagena Protocol). Consequently, importing and exporting countries and the related policy communities have different preferences as to the institutional home of regulation. At the same time, regulation by one institution inevitably affects the chances of the other side to realize its objectives. Based on the interest of countries that are members of both institutions in avoiding incompatible commitments, this situation created a demand for delimitation of the jurisdictions of the two institutions.

The interaction between the biosafety regime and the WTO reveals the particular structure of jurisdictional delimitation issues in global environmental governance. The members of both the source institution and the target institution are in a "mixed motive" situation that resembles the game-theoretic constellation of the Battle of the Sexes<sup>60</sup>. On the one hand, they possess a common interest in some sort of separation of jurisdictions because neither the WTO nor the Cartagena Protocol can be content with a conflict that disturbs both international trade and environmental protection. On the other hand, the constituencies of both institutions have conflicting preferences that make it notoriously difficult to find a mutually acceptable solution. Actors favoring free trade will advocate regulation by the WTO, while countries (and other actors) struggling for far-reaching domestic environmental regulation will prefer enlarged jurisdiction of the Cartagena Protocol. The governance challenge consists in arriving at a delimitation of jurisdictions that balances the diverging interests and realizes the common interests.

In jurisdictional delimitation cases, the institution that regulates first possesses a "first-mover advantage."<sup>61</sup> Equilibria of Battle of Sexes situations are comparatively stable. Commitments existing within one institution will therefore almost automatically limit the room for maneuver within negotiations of the other institution (if conflict is to be avoided). With the conclusion of the WTO agreements in 1994, the world trade regime thus secured a first-mover advantage by determining requirements that restrictions by importing countries had to meet. While some members of the biosafety regime might have preferred open conflict with the WTO, states that are members of both institutions had an interest in avoiding incompatible commitments and open conflict.

Hence, the Cartagena Protocol's successful assumption of jurisdictional authority from the WTO came at a price: it was dependant on accepting the latter's basic regulatory approach. As a consequence, the Cartagena Protocol comes close to setting *maximum* standards, which is unusual for international environ-

60. Stein 1982; and Keohane 1984.

61. Héritier 1996; and Mattli 2003.

mental agreements. Most of them define *minimum* levels of action countries are required to take because countries have incentives to implement low protection standards, while exceeding these standards is unproblematic and even contributes to achieving the environmental objective pursued. In contrast, the Cartagena Protocol not only determines a (minimum) standard to be followed by all countries (including developing countries), but also, by introducing certain criteria for risk assessment and precaution, effectively limits the level of protection that countries can justify regarding the import of LMOs. To be sure, the Protocol stops short of requiring importing countries to permit LMO shipments into their territory if the prescribed risk assessment does not, with sufficient scientific certainty, identify a certain level of risk—even though one may argue that such a requirement may be implicit in its rules. In effect, however, it specifies the pre-existing WTO maximum standards of regulation which WTO members are required not to exceed in order to facilitate free trade. Only by accepting the market-creation logic and the existing limitations established by the WTO, could the Protocol successfully determine what it deemed to be consistent with pre-existing WTO rules. As a result, the Protocol primarily further specifies, interprets and develops pre-existing WTO rules with respect to GMOs/LMOs, exploiting the room for interpretation that the relevant WTO agreements had left. If not in the formal legal sense,<sup>62</sup> it *de facto* constitutes a *lex specialis* to the WTO agreements (in particular the SPS Agreement).

#### 4. Possible Future Interaction and Policy Implications

Even after the delimitation of jurisdictions of the WTO and the Cartagena Protocol, interaction between the two institutions can be expected to continue. General rules can never account for all specific circumstances of the particular cases to which they apply. They must be interpreted implicitly or explicitly, and interpretation provides margins of discretion. Assuming that both the relevant WTO rules, especially its SPS Agreement, and the Cartagena Protocol remain unchanged for the foreseeable future, several possible future cases of interaction can be anticipated. In this section, we spell out these possible future interactions and explore both their origins and effects on the basis of a *ceteris-paribus* assumption: We assume that countries will continue to differ in their interests as to the appropriate balance between trade and biosafety objectives, but that the contracting parties will be prepared to honor clear-cut commitments entered into under either institution.<sup>63</sup>

**Future Behavioral Interaction:** Interaction between the two institutions will inevitably continue because the implementation of their rules by the con-

62. Howse and Meltzer 2002.

63. Both institutions may actually be seen as belonging to a larger “regime complex” (Raustalia and Victor 2004) including, *inter alia*, the International Plant Protection Convention and the Codex Alimentarius Commission. For the importance of these two institutions for the conflict over GMO trade, see for example Homeyer 2006. Our focus here is on the two principal international institutions involved in this conflict, the WTO and the biosafety regime.

tracting parties is closely interdependent. Through their unilaterally determined domestic action, the member states will inevitably influence the trade-off between the competing objectives of free trade and biosafety and affect the performance of both relevant international institutions. Every state action concerning trade in GMOs/LMOs simultaneously implements the rules of the SPS Agreement and the Cartagena Protocol. The farther a country restricts the import of GMOs/LMOs under the Cartagena Protocol, the more it will undermine the free-trade objective of the WTO. And the more liberally a state regulates such imports in line with the free-trade objective, the less it will conform to the objective of the Cartagena Protocol to ensure an adequate level of protection against the risks associated with trade in GMOs/LMOs.<sup>64</sup>

This interdependence reflects the logic of behavioral interaction (see section 2.2.2). It does not immediately originate from the rules of the source institution, but from the implementation of these rules by individual actors operating within the institution's issue area. It does not directly affect the decision-making of the target institution, but the performance of the latter within its own issue-area. The occurrence of behavioral interaction does not require collective decisions, but results from the unilateral implementation of existing decisions by relevant public or private actors. Over time, the implementation of individual actors will generate an order reflecting the accepted balance between trade interests and environmental interests. The exact nature of this order is yet unknown because implementation of the biosafety regime is still at an early stage.<sup>65</sup>

All else being equal, biosafety interests tend to have an advantage over free-trade interests in behavioral interaction. A country predominantly interested in biosafety can itself limit GMO imports accordingly, because it controls its own domestic customs boundaries. Because of the interdependence of trade and biosafety objectives, this will undermine the free trade in GMOs/LMOs. In contrast, a country prioritizing free trade cannot achieve its objective unilaterally, because at least two countries are involved in international trade. Thus, exporting countries are not in control of the import side. WTO law also prohibits unilateral trade sanctions. Overall, countries interested in biosafety therefore are in a better position to draw the balance between both objectives into their preferred direction in domestic implementation than countries favoring free trade. In accordance with our *ceteris-paribus* assumption, this advantage reaches its limits where the national implementation clearly disregards existing WTO commitments. We should also caution that obviously other factors will influence whether or not interested countries will actually exploit the room for more restrictive regulation of GMO imports.

**Possible Further Action within the WTO:** Within the WTO, the delimitation of jurisdictions between the two institutions might be further defined in response to exceedingly restrictive GMO import regulation. The WTO provides for at least two ways of diminishing the discretion left by the rules of the SPS Agree-

64. See also Burgiel 2002, 59–60.

65. Gupta forthcoming.

ment and the Cartagena Protocol, namely the court-like dispute settlement mechanism and political decision-making by the contracting parties. A finding of the Dispute Settlement Body could result in a further definition of the applicable rules, because every (quasi-)judicial application of existing rules necessarily involves law-making.<sup>66</sup>

The powerful WTO dispute settlement mechanism provides a promising forum for countries with strong trade interests, because the mechanism has the objective of protecting free-trade against unjustified restrictions. Interested countries may therefore challenge bold unilateral restrictions of trade in GMOs/LMOs under the Cartagena Protocol. The scope for such legal challenges primarily stems from the remaining potential for tensions in the interpretation of the Cartagena Protocol and the WTO agreements by individual countries. Whereas the Cartagena Protocol provides additional justification for countries interested in restricting trade in GMOs/LMOs—and may be supported by provisions of the Codex Alimentarius Commission and the International Plant Protection Convention<sup>67</sup>—countries privileging trade can employ judicial action to limit this room. A first relevant challenge of EU restrictions on trade in GMOs by the US, Canada and Argentina is already pending under the WTO and may result in the judicial development of rules relevant for the interaction between the WTO and the Cartagena Protocol—even though the challenge is not directly related to the Protocol.<sup>68</sup>

Countries with strong biosafety interests could attempt to achieve political decisions within the WTO to shift the delimitation of jurisdictions in their favor. Any political WTO decision addressing the issue would have to at least acknowledge the Cartagena Protocol. Pending is, first, the proposal for the SPS Committee to recognize the Cartagena Protocol as an international standard-setting body under the SPS Agreement. This step would formally introduce the rules of the Cartagena Protocol into the world trade system, alongside the standards of the Codex Alimentarius Commission, the International Plant Protection Convention and the Office International des Epizooties.<sup>69</sup> Beyond the recognition of the current rules of the Cartagena Protocol, the proposal would shift the jurisdictional balance towards the Protocol by implicitly also recognizing its future decisions—which does not improve its prospect of being accepted. Second, the larger problem of the tension between the world trade system and multilateral environmental agreements with trade restricting effects is part of the agenda of the Doha round of trade negotiations. Any decision on the matter would immediately affect the interaction between the WTO and the Cartagena Protocol. However, both options for political decision-making have little prospect of adoption because they face the well-known resistance by the US, that is not a party to the CBD and its Cartagena Protocol (and unlikely to join them in the

66. Shapiro 1981, 28–36.

67. Homeyer 2006.

68. Boisson de Chazournes and Mbengue 2004; and Gupta forthcoming.

69. Rivera-Torres 2003, 312–313.

foreseeable future<sup>70</sup>). Progress on the larger issue of the relationship between the WTO and multilateral environmental agreements also faces skepticism and opposition by developing countries fearing a new wave of protectionism.<sup>71</sup>

In every case of political or judicial decision-making, the WTO will be the target of interaction through commitment originating from the Cartagena Protocol. Decision-making within the WTO will always occur in light of, and thus be affected by, the rules of the Protocol (and other international institutions such as the Codex Alimentarius Commission). Political decision-making can hardly be expected to produce decisions which are in open conflict with the Protocol, because the overwhelming majority of states, being members of both institutions, would strive to avoid incompatible commitments. Even non-members of the Cartagena Protocol, such as the United States, are likely to have little interest in making the agreements mutually incompatible, since this might harm the legitimacy of the WTO. Likewise, the WTO dispute settlement organs are mandated to take into account general rules of international law and act on behalf, and in the interest, of member states. Since open conflict would endanger the legitimacy and governance capacity of the WTO, it should have an interest in working, to the extent possible, towards a *modus vivendi* rather than a possible escalation.<sup>72</sup> Indeed, the WTO dispute-settlement organs have already developed a record of taking into account the provisions of multilateral environmental agreements and, to this end, they could exchange information with or ask for advisory opinions of the Cartagena Protocol, in particular its new compliance committee.<sup>73</sup>

Relevant judicial or political decision-making will affect the behavioral interaction between the WTO and the Cartagena Protocol. A significant redefinition of the delimitation of jurisdictions will inevitably influence domestic implementation (unless contracting parties choose to ignore and trespass valid rules). If the Dispute Settlement Body rejects bold restrictions of trade in GMOs/LMOs, WTO members must adapt their measures accordingly, or else face trade sanctions. In contrast, if the Dispute Settlement Body accepts a broad range of domestic measures to ensure biosafety, this may encourage originally hesitating countries to strengthen their restrictions on GMO imports. A political recognition of Cartagena rules within the world trade system can be expected to have a similar effect. In any event, a further specification of the delimitation of jurisdictions within the WTO would have to be taken into account under, and would thus influence, the Cartagena Protocol.

**Possible Further Action under the Cartagena Protocol:** Within the Cartagena Protocol, a further delimitation of jurisdictions under the WTO might be responded to by its own judicial or political decision-making. A judi-

70. Brunnée 2004, 623–624.

71. E.g. Araya 2001; and Gnath 2004.

72. Similar Howse and Meltzer 2002; and Eggers and Mackenzie 2000, 540–542.

73. Similar Eggers and Mackenzie 2000, 541–542; Boisson de Chazournes and Mbengue 2004, 297–301; and Howse and Meltzer 2002.



cial decision could result from a legal challenge of a country's regulation of trade in GMOs/LMOs under the compliance mechanism of the Cartagena Protocol established in 2004.<sup>74</sup> In particular, triggering this compliance procedure constitutes a strategic policy option as a counter-measure of biosafety interests against a WTO challenge especially because a party may trigger the procedure against itself. If its own domestic measures are challenged under WTO law, a party interested in biosafety could thereby seek to obtain support of the biosafety regime on the matter and thereby increase the pressure on the WTO dispute-settlement bodies to take into account and respect the Cartagena Protocol. With both (quasi-) judicial processes investigating the same case, the pressure to enter into some (informal) inter-judicial exchange ensuring compatible findings would rise. Relevant *political* decisions in response to the WTO could be taken by the conference of the parties to the Cartagena Protocol. Interested parties could seek adoption of additional rules to further define the jurisdictional delimitation of the regime vis-à-vis the WTO, for example with respect to risk assessment and precaution, as appropriate.

The scope for such judicial and political decision-making will be limited in turn by interaction through commitment originating from the WTO. It is hardly conceivable that the conference of the parties to the Cartagena Protocol or its compliance committee would ignore the WTO commitments of the vast majority of parties. Moreover, the preamble of the Protocol virtually instructs those interpreting the agreement—be it the conference of the parties or the compliance committee—to take into account the WTO regulations, which would include any decisions taken by the WTO on relevant matters. Under these circumstances, initiatives under the Cartagena Protocol cannot be expected to move the jurisdictional boundaries significantly in favor of biosafety, but primarily to counter attempts of the world trade system to privilege trade interests (or to carefully further specify the existing balance).

As in the case of the WTO, relevant judicial or political decision-making can be expected to affect the behavioral interaction between the WTO and the Cartagena Protocol. First of all, contracting parties must adjust their domestic implementation measures to the new rules. Measures ruled out under the Protocol cannot be sincerely applied any more and will almost certainly be considered as a violation of WTO commitments. And measures explicitly accepted under the Protocol may even be adopted by parties which were originally hesitant because they feared trade conflicts.

Also in line with the effects of further decision-making on the matter within the WTO, secondary rules adopted under the Cartagena Protocol would modify the decision situation within the WTO. They will have to be taken into account in subsequent judicial and political decision-making and thus create a further case of interaction through commitment of the jurisdictional delimitation type. This could be followed by further decision-making within the WTO that would similarly influence the conditions for further decision-making under

74. CBD 2004; and Mackenzie 2004, 272–273.

the Cartagena Protocol, and so on. The potential for the continuation of this feedback process is only constrained by the limited room that is available in both regimes for advancing decision-making while staying compatible with the commitments of the other side.

## 5. Conclusion

The separate exploration of several relevant cases of interaction reveals the particularities of the complex interdependence of the WTO and the Cartagena Protocol. Our conceptual approach of disaggregating complex interaction situations into individual cases of interaction allows for the clear identification of causal relationships between both institutions. The varying influence exerted by the WTO on the biosafety regime and *vice versa* becomes clearly visible. The analysis of the causal mechanism driving each case of interaction allows for the identification of crucial factors that have shaped the interaction as well as its consequences. By re-aggregating the individual cases, we acquire a broader picture of the driving forces and consequences at work. Since many of the factors underlying and shaping the interaction are likely to remain influential, their identification provides a solid basis for assessing the future relationship of both regimes and the policy options available in this respect.

The overall interaction appears as a stepwise delimitation of jurisdictional authority. It is composed of several separate interaction cases that follow the causal mechanism of interaction through commitment and, more specifically, concern jurisdictional delimitation issues. On the one side, the WTO agreements of 1994 restricted the ability of the Cartagena Protocol to regulate trade in GMOs/LMOs. On the other side, the Cartagena Protocol has limited the scope for further regulation of this area by the WTO. The stepwise jurisdictional delimitation has been driven by the institutions' different objectives as supported by two groups of states and policy communities as well as by the interest of states that are members of both institutions in avoiding incompatible commitments.

Eventually, the relationship between both agreements is to be worked out further in their implementation "on the ground." Although future rule-making within either of the two institutions will have to take into account the commitments entered into by the member states of the other institution, the momentum of the future interdependence between the two institutions will largely be determined by behavioral interaction. Because domestic implementation of one institution will simultaneously affect the performance of the other one, countries regulating trade in GMOs/LMOs will, within the existing margin for interpretation, decide on the exact balance between the objectives of free trade and biosafety. With the Cartagena Protocol having addressed the relationship with the WTO, its evolving domestic implementation is likely to be the focal point of future interaction with the world trade system.

The delimitation of jurisdictions of the WTO and the Cartagena Protocol has developed in the absence of centralized coordination. Since there is no suit-

able overarching international institution that could accommodate conflicting commitments with each other, the members of multilateral treaty systems resort to collective decision-making within either of the institutions involved, while taking into account the objectives of the other institution. The transmission belt introducing external objectives into the internal decision processes of either institution is the joint membership of both institutions of the vast majority of parties. The twin-members have an interest in both regulatory objectives concerned, and will therefore tend to avoid incompatible commitments. Hence, in spite of the tension between the objectives of the WTO and the Cartagena Protocol and despite the diverging interests of the member states as to the appropriate balance between them, certain features of the system of international governance drive the institutions towards an accommodation even in the absence of a coordinating institution. As a result, there is a good chance that both regimes will develop further in consistent ways in the future.

However, the largely successful delimitation of jurisdictions does not imply that the balance found is necessarily to the liking of all actors involved. Jurisdictions can be delimited in different ways with different effects on outcomes. The exact balance struck is largely a matter of the distribution of power between the institutions involved. The trade side successfully secured a first-mover advantage by structuring the regulatory field through the WTO agreements of 1994, most importantly the SPS Agreement, so that biosafety negotiators had to operate from the very beginning in this "shadow of the WTO." However, the seemingly weak Cartagena Protocol showed surprising strength in assuming regulatory authority from the allegedly powerful WTO and in exploiting the remaining room for maneuver. As a result, an effective protection of biological safety has gained support. Whether the resulting balance is sufficient for this purpose will only become apparent during the implementation of both agreements.

Obviously, whether the existing balance will actually provide the basis for a stable solution of the inter-institutional conflict will also depend on, and be influenced by, exogenous factors. For example, the further development of the societal conflict over the use of biotechnology and GMOs, which underpins the institutional interaction between the WTO and the Cartagena Protocol, is difficult to predict. Thus, the emergence of a major GMO food scare may have repercussions on the relationship between these international institutions, as may the more subtle evolution of related public attitudes that is influenced by a number of further factors.

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